

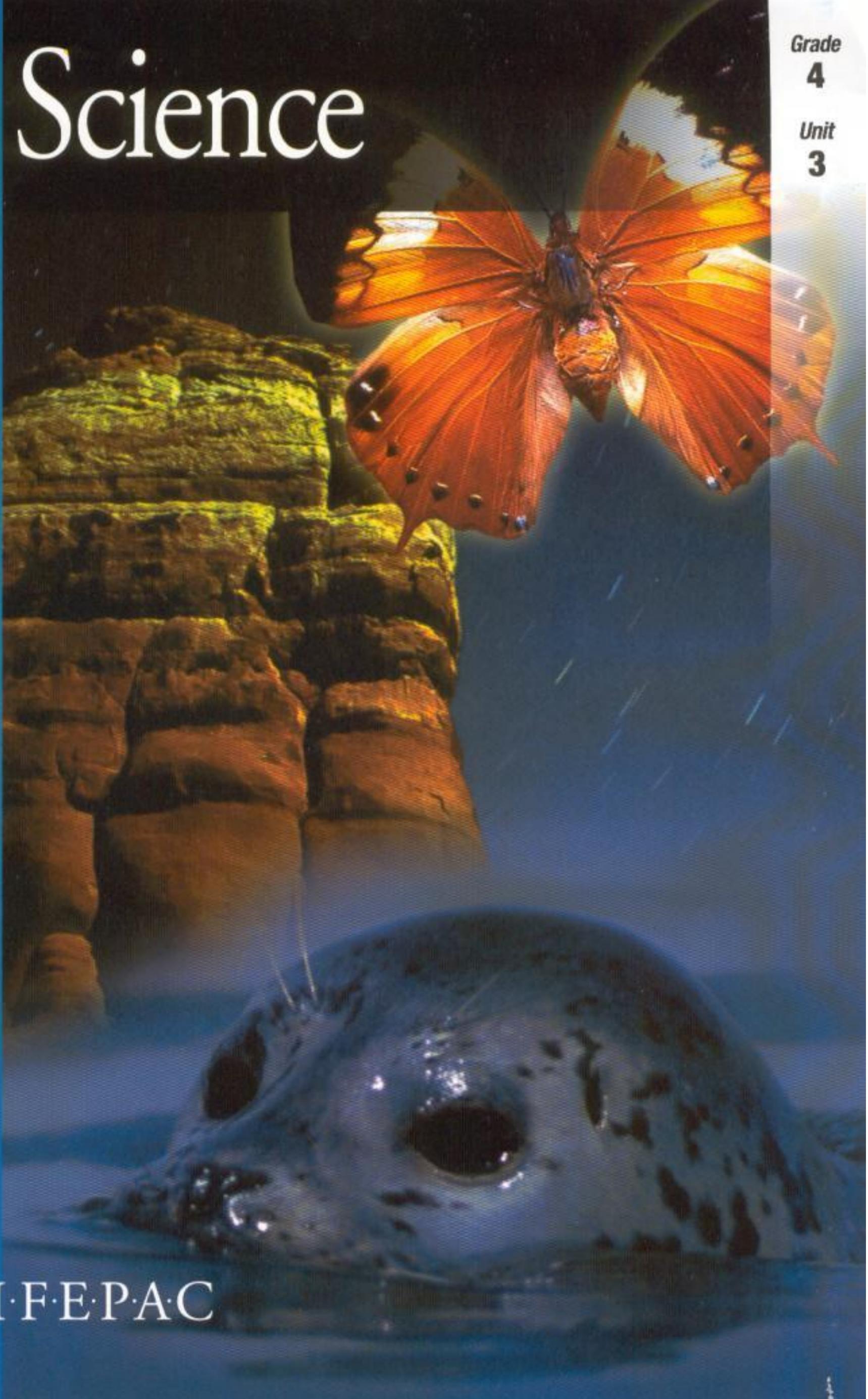


Alpha Omega Publications

# Science

Grade  
**4**

Unit  
**3**



LIFE·PAC

# SCIENCE 403

## MAN AND HIS ENVIRONMENT

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# MAN AND HIS ENVIRONMENT

God created the world and gave man the job of caring for His world. In this LIFEPAK you will learn what God created and the systems He planned for life on earth. You will learn how man depends on the things God created. You will learn if man has taken good care of God's earth. Also, you will learn about plans for keeping God's world beautiful and useful.

## OBJECTIVES

**Read these objectives.** The objectives tell you what you should be able to do when you have successfully completed this LIFEPAK.

When you have finished this LIFEPAK, you should be able to:

1. Tell four resources that God provided on earth.
2. Tell the meaning of ecology.
3. Explain the meaning of a food chain.
4. Tell about the kinds of living things in a population.
5. Explain about the balance of nature.
6. Tell about some communities of living things and how the living things depend on each other.
7. Tell ways man has been careless with the environment.
8. Tell ways that the resources can be conserved.
9. Tell ways that the resources can be preserved.

## VOCABULARY

**Study these new words.** Learning the meanings of these words is a good study habit and will improve your understanding of this LIFEPAK.

**bacteria** (bak tir'ē u). Very small plants, so small that they can usually be seen only through a microscope.

**beaver** (bē' vur). A gnawing animal with soft fur, flat tail, and webbed hind feet.

**cactuses** (kak' tus uz). The plural of cactus. A plant with a thick, fleshy stem that usually has spines but no leaves.

**carbon dioxide** (kar' bun dī ok' sīd). A colorless gas that is present in air.

**chlorophyll** (klōr' u fil). The green coloring matter in plants.

**conserve** (kun sĕrv'). To protect from loss or from being used up.

**consumer** (kun sū'mur). A person who uses food, clothing, or anything grown by producers.

**contour plowing** (kon' tūr plou' ing). Plowing around hills to prevent erosion.

**crayfish** (krā' fish'). A freshwater animal looking much like a small lobster.

**create** (krē at'). To make something that has not been made before.

**decay** (di kā'). To become rotten.

**decomposer** (dē' kum pō' zur). Something that rots something else.

**dew** (dü). Moisture from the air that condenses and collects in small drops on cool surfaces during the night.

**ecologist** (ē kol' u jist). A person skilled in ecology.

**ecology** (e kol u je). The science that deals with the relation of living things to their environments and to each other.

**egret** (ē' gret). Any of various white or grey herons.

**energy** (en' ur jē). The power to do work.

**environment** (en vī' run munt). All the surrounding things, conditions, and influences that have to do with the growth of things.

**erosion** (i rō' zhun). Being worn away little by little.

**extinct** (ek stingkt'). No longer existing.

**fungi** (fun' jī). Plural of fungus. Plant without flowers, leaves, or green coloring matter.

**geyser** (gī' zur). A spring that sends up jets of hot water or steam.

**grouse** (grous). A brown bird with feathered legs that is hunted for food.

**habitat** (hab' u tat). A place where an animal or plant naturally lives or grows.

**mesquite** (me skēt'). A tree or shrub common in the southwestern United States.

**moisture** (mois' chur). Slight wetness.

**mold** (mōld). A fungus that appears on food when it is left in a warm, moist place.

**nitrogen** (nī' tru jen). A gas that is in the air.

**nuclear** (nü' klē ur). Having to do with atomic energy.

**nutrient** (nu' trē unt). A nourishing substance.

**otter** (ot' ur). An animal somewhat like a weasel that has webbed toes with claws and is a good swimmer.

**oxygen** (ōk' su jun). A gas that is in the air.

**pest** (pest). A thing or person that causes trouble.

**photosynthesis** (fō' tu sin' thu sis). The process in a green plant that produces carbohydrates by the action of sunlight on the chlorophyll.

**plankton** (plangk' tun). The small animals and plants that live in water.

**pollution** (pu lū' shun). That which makes an environment dirty or impure.

**population** (pop' yu lā' shun). A part of the inhabitants of an area.

**preserve** (pri zerv'). To keep safe, to protect.

**producer** (pru dü' sur). One who makes things that are used by others.

**recycle** (re si' kul). To treat or process so it may be used again.

**resource** (re' sōrs). Any supply that will meet a need.

**rot** (rot). To become rotten, to decay.

**sagebrush** (saj' brush'). A grayish-green, bushy plant in western North America.

**saguaro** (su gwä' rō). A tall cactus of Arizona.

**sequoia** (si kwoi' u). An evergreen tree of California.

**smog** (smog). A combination of smoke and fog in the air.

**snail** (snāl). A small animal with a soft body that crawls very slowly.

**solar** (sō' lur). Of the sun.

**spoonbill** (spün' bil'). Any of a group of long-legged birds with spoon-shaped bills.

**squid** (skwid). A sea animal like an octopus having ten arms instead of eight.

**termite** (tēr' mīt). An insect with a soft body that eats wood.

**vapor** (va' pur). Moisture in the air.

**vulture** (vul' chur). A large bird that eats dead animals.

**Note:** All vocabulary words in this LIFE PAC appear in **boldface** print the first time they are used. If you are unsure of the meaning when you are reading, study the definitions given.

**Pronunciation Key:** hat, āge, cāre, fār; let, ēqual, tērm; it, īce; hot, ōpen, ōrder; oil; out; cup, pūt, rüle; child; long; thin; /TH/ for then; /zh/ for measure; /u/ represents /a/ in about, /e/ in taken, /i/ in pencil, /o/ in lemon, and /u/ in circus.

# I. MAN DEPENDS ON GOD'S PLAN

Everyone in Mrs. Turner's class at Good Hope School was busy. Today was a special day. The award for the most cans was being presented. Stacks of cans were in front of the building. Boxes of cans lined the driveway. In every corner cans peeked out of sacks, garbage cans, and containers of every size.

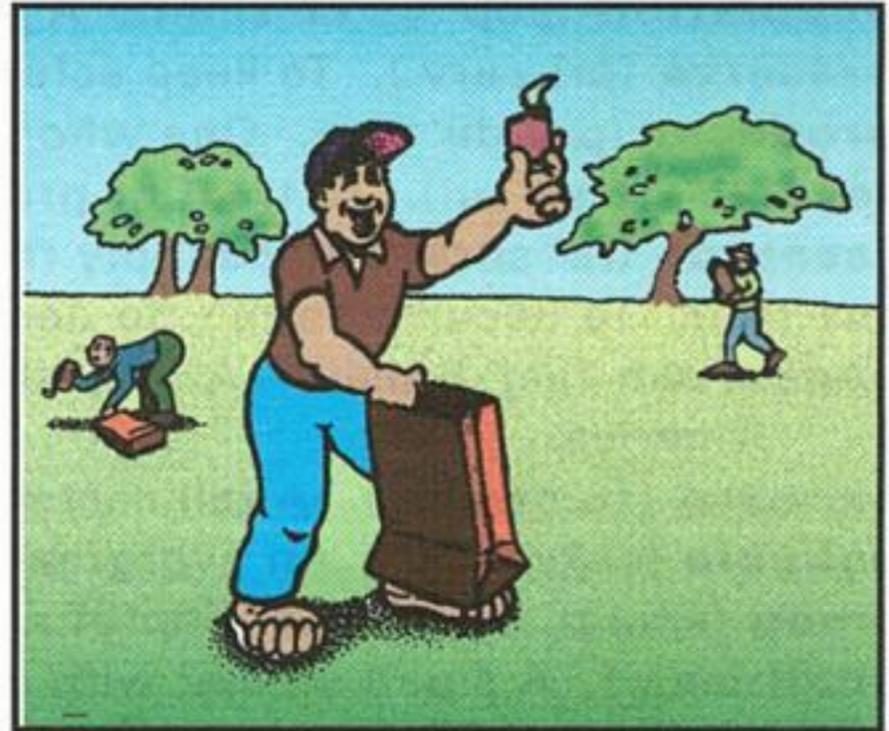
Mrs. Turner, the teacher, said to the class, "Why did you collect all these cans?" No one spoke.

Then Ken raised his hand and said, "My mother was glad to have the cans taken away from the house."

Kim added, "My neighbors wanted the alley cleaned up."

"We should use things again and again. These cans will be used to make other cans," said Jane.

"You are right," said Mrs. Turner. You are going to study in this LIFEPAK about your **environment**. In the first section you will learn about the meaning of the word **ecology** and how God has provided for His earth.



## SECTION OBJECTIVES

**Review these objectives.** When you have completed this section, you should be able to:

1. Tell four resources that God provided on earth.
2. Tell the meaning of ecology.
3. Explain the meaning of a food chain.
4. Tell about the kinds of living things in a population.
5. Explain about the balance of nature.

**Restudy these words.**

bacteria	energy	photosynthesis
carbon dioxide	environment	population
chlorophyll	fungi	producer
consumer	mold	recycle
creation	nitrogen	resource
decay	nutrient	rot
decomposer	oxygen	termite
ecologist	pest	vapor
ecology		

**ECOLOGY**

You have heard the word **ecology** used often. When the air is dirty, when rivers are not clean, when beaches are covered with oil, are times that you hear ecology mentioned. You have probably collected cans or papers to be **recycled**. People are concerned about God's world now. Ecology is the study of the way all living things

relate to each other in the world God has made for us.

*Ecology* comes from two Greek words which mean *the study or science of the home*. Home doesn't mean just your home but the homes and **environments** of all plants and animals and how they are related to each other.



**Answer these questions.**

1.1 What does *ecology* mean in Greek? \_\_\_\_\_

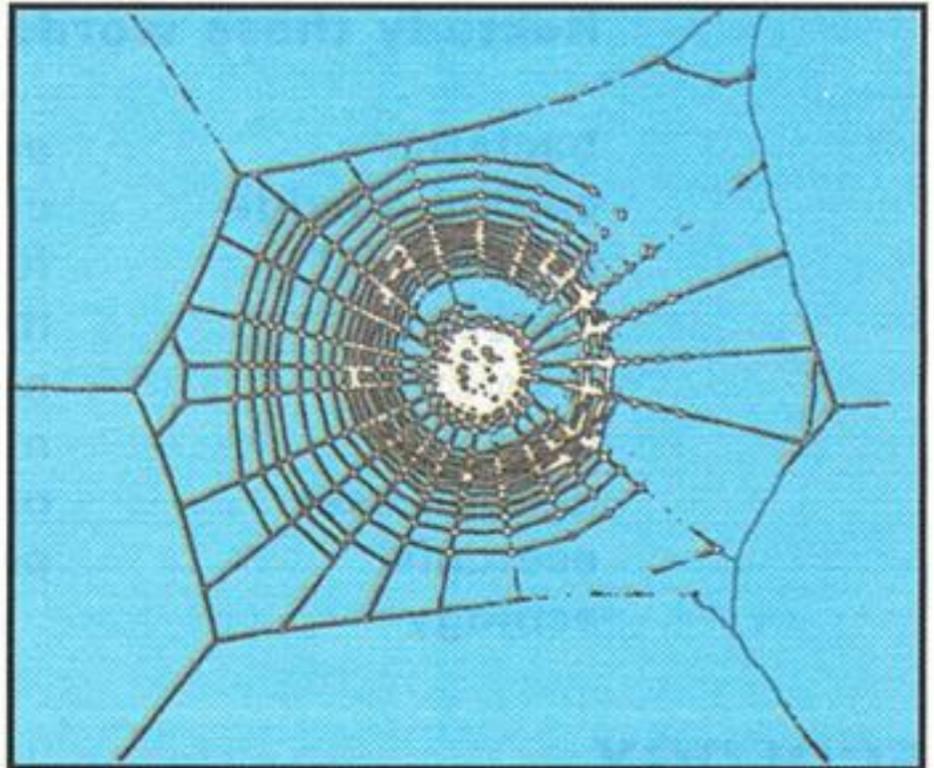
\_\_\_\_\_

1.2 What is ecology? \_\_\_\_\_

\_\_\_\_\_

Scientists call life on earth "the web of life" because life is connected much like the threads of a spider web are joined. Think about a spider web.

Notice how each thread depends on the other threads to make a complete web. If one thread breaks, the other threads would not be in place either. Life on earth is like the web. If one part of life stops, the rest of the living things will have trouble living in the same way.



**Write your answers on the lines.**

1.3 In the web of life, how do you depend on a tree? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1.4 In the web of life, how do you depend on a cow? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ecology studies the web of life. In ecology you study how life connects together, lives and adjusts to each environment.

Environment has a broader meaning. Environment means the place where you live. Environment

means more than just your home environment, for the meaning also reaches to the area in which you live. You may live in a city environment. You may live in a desert environment, too.



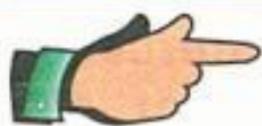
**Think and answer the questions.**

1.5 In what kind of environment do you live? \_\_\_\_\_  
\_\_\_\_\_

1.6 You know someone who lives in a different environment. What kind of environment is it? \_\_\_\_\_  
\_\_\_\_\_

Environment has become important because man has made a special environment for himself that has changed other environments. Big cities have changed the environment around them. Trees have been cut, land moved, streets paved, and many buildings built. The climate becomes warmer in winter and summer in the crowded cities. The city has changed the environment. **Ecologists** are concerned about these changes.

---



**Think and answer the questions.**

1.7 How would building a city change the environment of a field mouse? \_\_\_\_\_

1.8 How would the building of many new houses on the edge of town change the environment of John, a boy who lives on a farm near the new houses? \_\_\_\_\_  
\_\_\_\_\_

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Ecology is more than the study of your home. It is the study of the life that God put on earth and the homes provided by God for each kind of life. Scientists, called ecologists, have worked out an order system for the study of homes. As you study this LIFEPAK you will find that homes, or environments, may seem to be different from each other, but in many ways they are the same.

---



**Think and answer the questions.**

1.9 Write a meaning for ecology now that you have read more about the science. \_\_\_\_\_  
\_\_\_\_\_

1.10 What is the meaning of environment? \_\_\_\_\_  
\_\_\_\_\_

1.11 What is the name of the scientist who studies ecology? \_\_\_\_\_  
\_\_\_\_\_

1.12 What does "web of life" mean? \_\_\_\_\_  
\_\_\_\_\_

## RESOURCES

All living things were provided by God with the things each one would need. God knew exactly what kind of things you and other living creatures would need to be able to live and grow. So He put **resources** on the earth to be used by His creatures. The four resources you will study are *water*, *air*, *light*, and *soil*.

**Water.** All living things must have *water* in order to live and grow. Think of some ways that water is used. Some uses of water are easy to list. Other uses are harder to remember because you do not know how much you depend on water. You do not see everything water does for you.

Water greatly changes the

temperatures of areas close to it. Water warms slowly and cools even more slowly. Land heats and cools very quickly. Therefore, land changes its temperature more often than does water. Land that is near water changes its temperatures less often than land that is not near water. For this reason land is much hotter and much colder inland, or away from water. The areas inland do not feel the good results of the water. Therefore, inland areas get very hot or very cold. For this reason plants, animals, and people often try to live near the water. Of course, they also need water for many other reasons. Have you thought of some?



---

**Write your answers on the lines.**

1.13

Name some ways to use water. \_\_\_\_\_  
\_\_\_\_\_

1.14

Tell why inland areas get very hot or very cold. \_\_\_\_\_  
\_\_\_\_\_

---

**Air.** Another resource God put on the earth for living things is *air*. In order to live and grow, all living creatures need air. Air is largely made up of two gases called **nitrogen** and **oxygen**. Air also contains water in the form of a gas

called water **vapor**. Air is the earth's blanket. The earth takes heat from the sun, and the air stores it for your use, like water does. The water vapor in the air holds heat much as do bodies of water. However, there is much less water vapor than in a

body of water. As a result, the amount of heat held is also much less.

After the sun goes down, the air still holds heat. This heat keeps the earth from getting as cold during the night. Without the air, our earth

would be very hot in the daytime and would be freezing cold at night. The change in temperature from season to season would also be much greater. All life on earth needs the protection of the air.



**Write the correct word from the following list on each line.**

air nitrogen oxygen vapor sun water blanket heat

- 1.15 God provided living things with both water and \_\_\_\_\_.
- 1.16 The earth takes heat from the \_\_\_\_\_, and the air stores it for our use.
- 1.17 Air is largely made up of two gases called a. \_\_\_\_\_ and b. \_\_\_\_\_.
- 1.18 The air also contains water in the form of a gas called water \_\_\_\_\_.
- 1.19 Air is the earth's \_\_\_\_\_.
- 1.20 Heat is held in the air by \_\_\_\_\_ vapor.
- 1.21 After the sun goes down, the air still holds \_\_\_\_\_.

**Light.** The third resource in your study is *light*. God made light. He made the sun. The source of earth's light is the sun. Light brings heat from the sun to the earth. Without light, plants could not grow and

make food. Therefore, no animals would be able to live. Even the smallest animals, which grow in the dark places, feed on living things that need light. Light is necessary for life.



**Answer these questions.**

- 1.22 Who made light? \_\_\_\_\_
- 1.23 What is the source of the earth's light? \_\_\_\_\_
- 1.24 What do plants need in order to make food and to grow?  
\_\_\_\_\_

**Soil.** The fourth resource in your study is *soil*. Plants need soil in which to grow. You have learned that animals must have plants for food. Plants help to make the soil in which they live. They make soil as

they decay, putting **nutrients**, or food back into the soil.

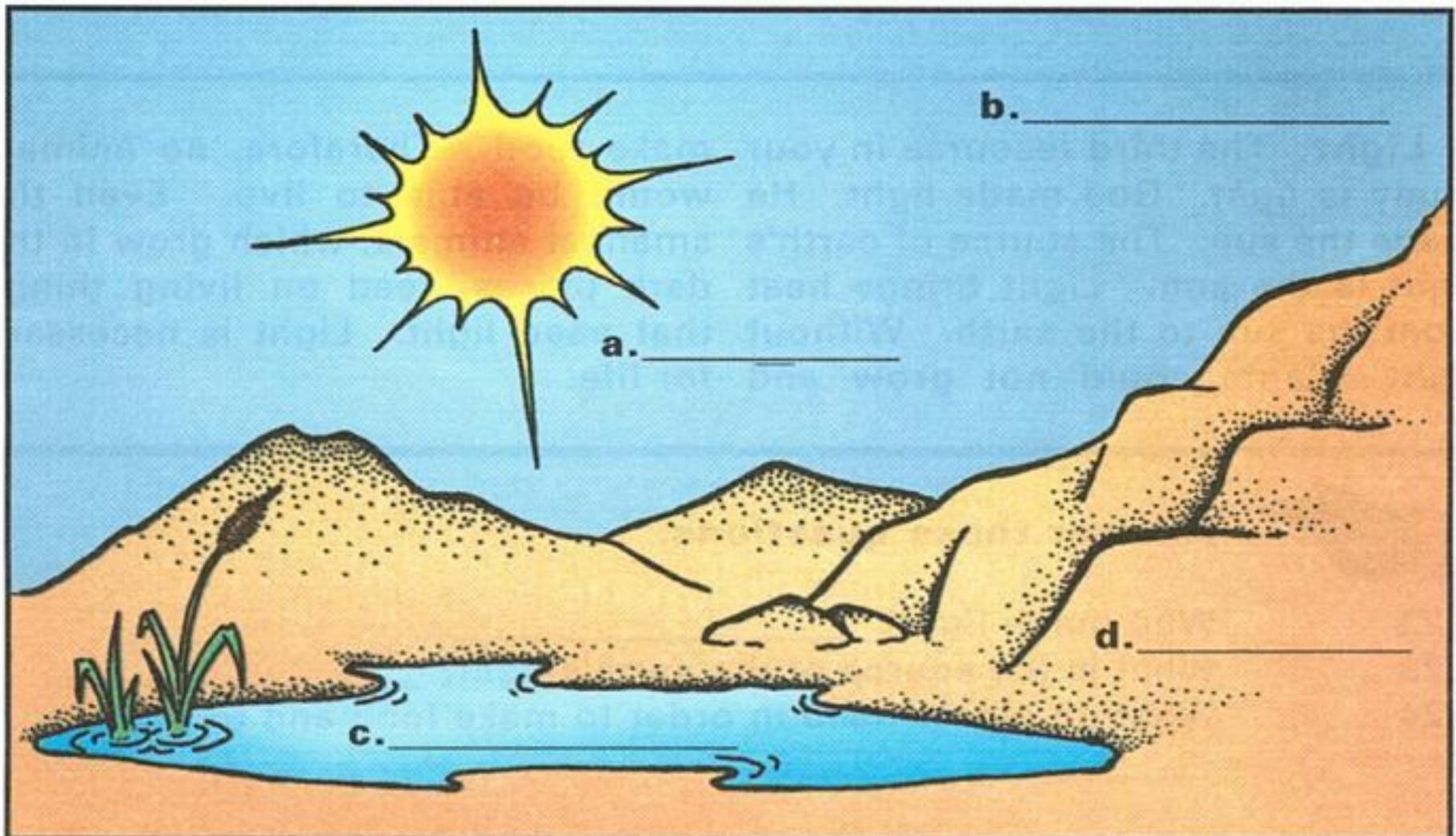
Water, air, light and soil are all parts of your natural environment. They work together to make your environment right for you.



**Look at the picture.**

1.25

On the lines write the name of each resource that God has given His creatures.





### Think and Draw.

1.26

What is your environment like? Does it include natural things and people-made things? Does it include people and animals? Does it include pleasant and unpleasant things? On a sheet of drawing paper make a picture of your environment. When you have finished it, put it in your LIFEPAK at this page. You will want to look at it again when you study about human communities.

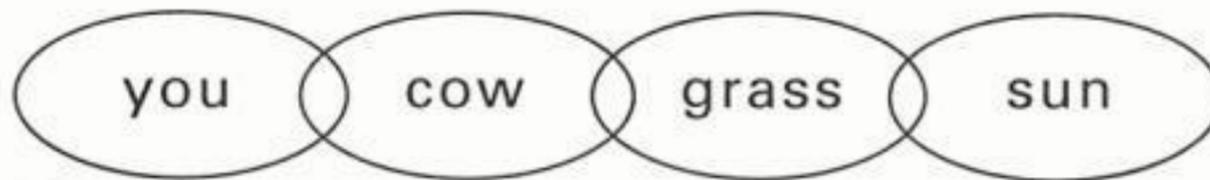


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## FOOD CHAIN

You have learned that a plant makes food. You know that animals eat plants. Other animals or people eat the animal that eats the plants. You eat hamburger from the cow who ate the grass. The grass made food from the sun. The plants and the animals are part of a food chain.

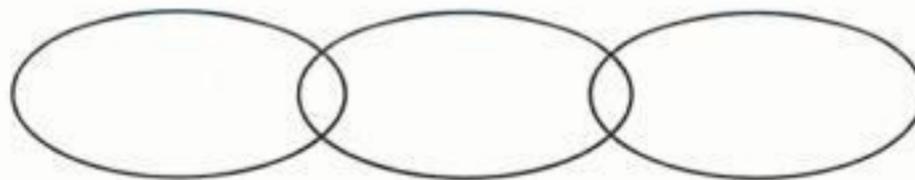
You can make a food chain to show how you get your energy. Suppose you drank milk for breakfast. Here is how your food chain would look:



**Think of some of your other favorite foods. Make food chains to trace the energy you receive back to the sun.**

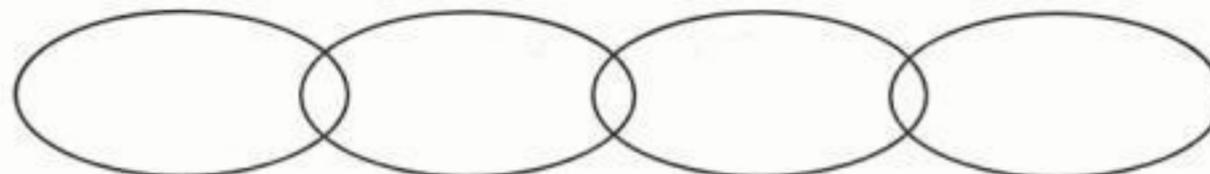
1.27

You ate a peach.



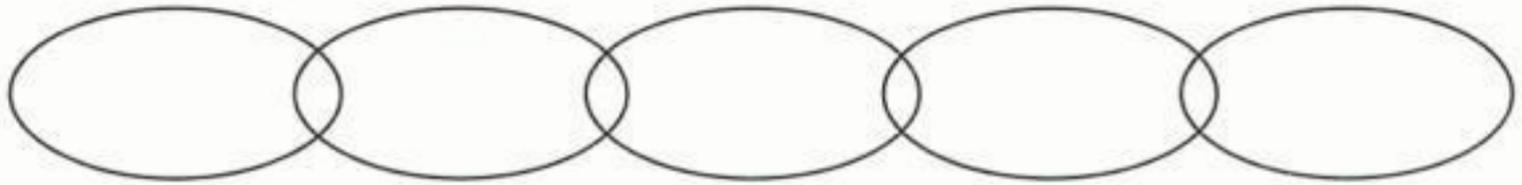
1.28

You ate a beef steak.



1.29

You drank a milk shake.

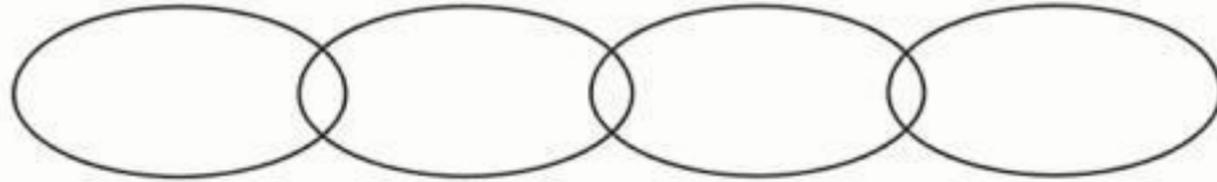


**Make four food chains from the plants and animals in this picture.**

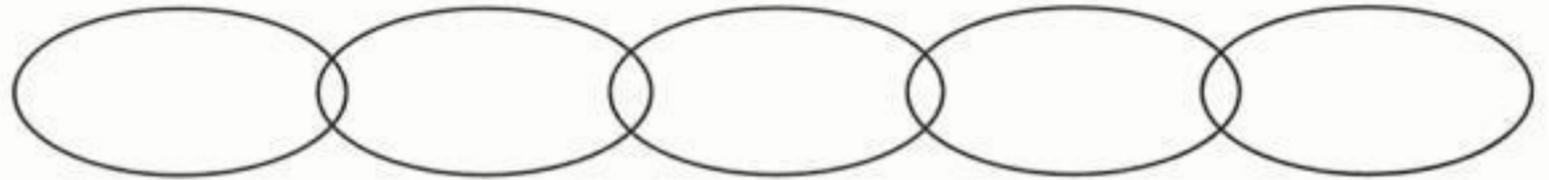




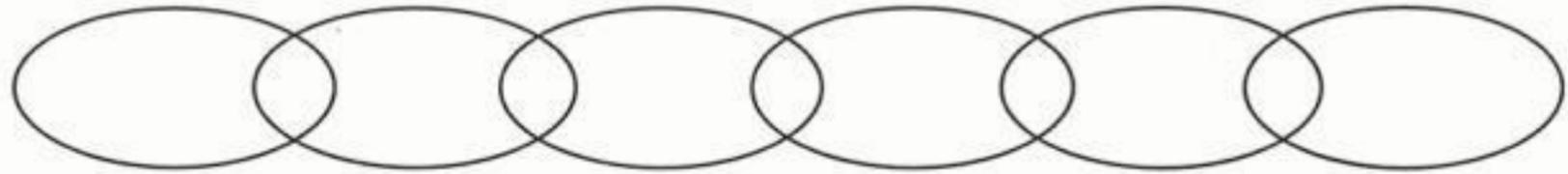
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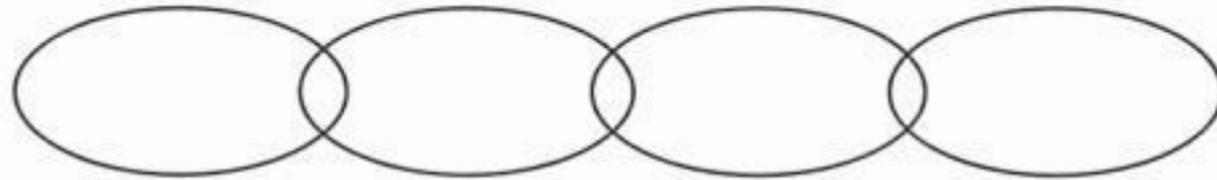
1.31



1.32



1.33



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## POPULATIONS

In earth's life system there are a dog population, a cat population, a many **populations**. Each kind of bee population, a flower population, living thing makes up a population. and more. You are a member of the In the town where you live, there is human population.



## Think and Write.

1.34

How many populations, both plant and animal, can you find in your environment?

Make two columns on a sheet of paper. Label one "Plant Population". Label the other "Animal Population." List as many as you can see about you. When you think you have found all of them, ask a friend to compare lists with you. Are you surprised to see how many different populations there are about you?



Teacher check \_\_\_\_\_

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Date

A population may be large, or it may be small. It may also be a part of some larger population. Each population is part of the web of life. Each population has a place that no other population can fill. All populations depend on each other in many ways.

Most important, the populations depend on each other for food. In any population three kinds of living things are present. These living things are **producers, consumers, and decomposers.** All living things depend on plants for life. If no plants grew, there would probably be no life on earth. So plants are the most important producers. Plants produce the food that gives animals and people **energy.** Since energy comes from the sun, where do the plants get their energy?

In order to make food, plants go

through a wonderful process called **photosynthesis.** Only plants which have a green coloring called **chlorophyll** can carry on this process. The plants get water from the soil through their roots. From the air they take in a gas called **carbon dioxide.** With the chlorophyll in their leaves, the water from the soil, and the carbon dioxide from the air, plants must also get energy from the sun in order to make food. At the same time they are making food, the plants are putting oxygen into the air for you to breathe. You breathe in the oxygen that comes from plants. You also breathe out the carbon dioxide that plants use to make food. What a wonderful God, Who has made such a well-balanced creation. The plants can be eaten by either animals or humans, who take into their own bodies the energy in



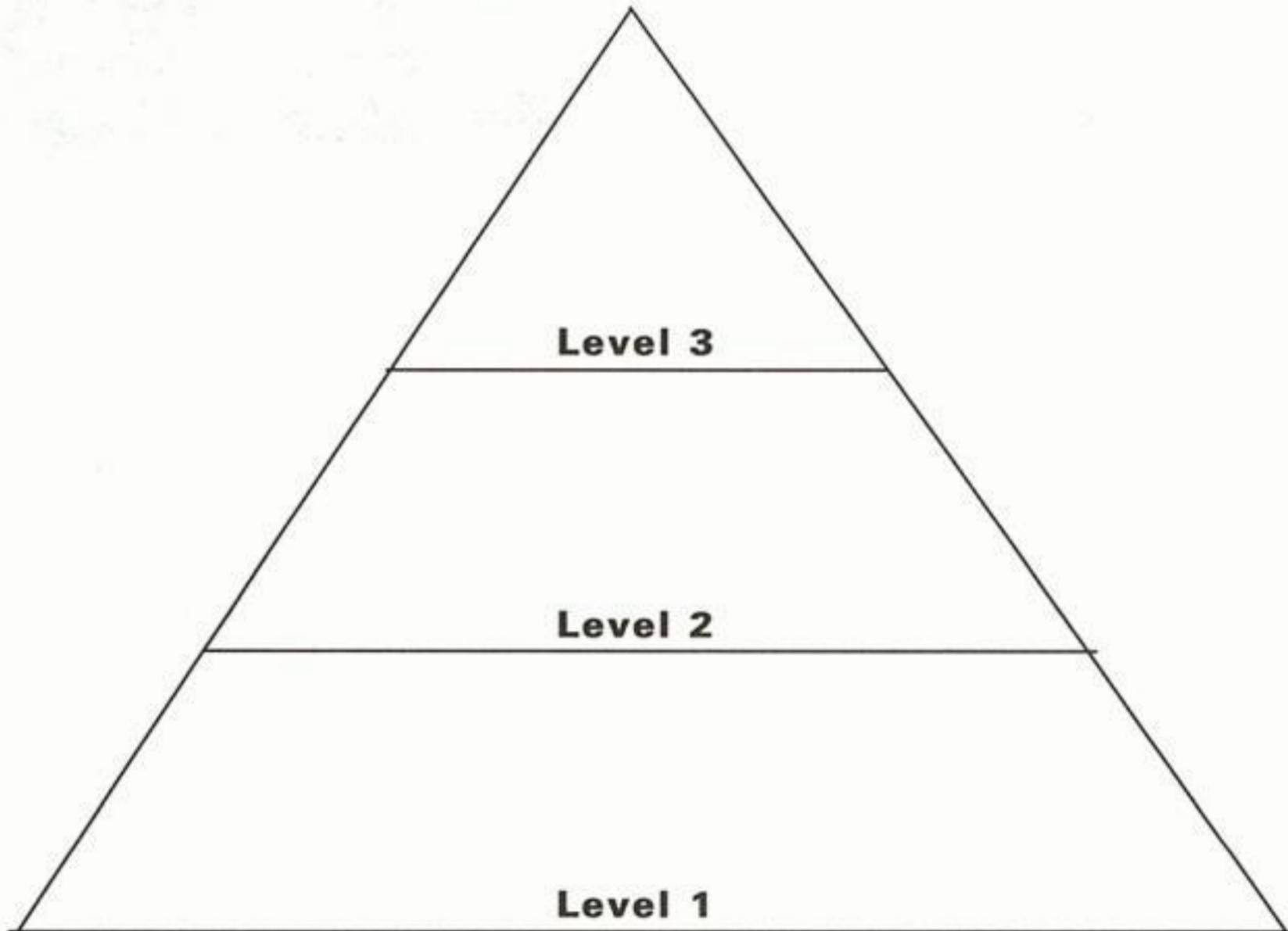


1.42

### Think and write.

You can make a pyramid to help you understand who the producers and consumers are. A list of living things is near the pyramid. Read in other books if you need to find out about any words on the list.

- 1. From this list take the producers and write them in the blanks on the lowest level.
- 2. Take the plant-eating consumers who eat only producers and put them on the second level.
- 3. Put all predators on Level 3.



acorns  
apple trees  
cabbage  
carrots  
chickens  
corn  
cows

deer  
eagles  
frogs  
grains  
grass  
horses  
lettuce

mice  
owls  
potatoes  
rabbits  
squirrels  
wolves  
worms



Teacher check \_\_\_\_\_

Initial

Date







**Read, think, and write.**

1.48

Read about another true example of how the balance of nature was upset. Look it up in an encyclopedia. Write a couple of sentences to tell what happened.

### **Rabbits in Australia**

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You have learned that plants are the main food producers in any community. Since animals depend on plants for food, only a limited number of animals can live in a community. If the environment has too many animals, they will soon use up the plant supply. They will then go on a search for food. When they find another community where there is plenty, they will move in. Soon too many animals will be there for the supply of food, so the balance of both communities has been destroyed.

The balance of nature between plants and insects can be destroyed. Too many insects for the supply of plants will destroy the plant life. Then the insects will die, too.

Every animal and plant has its predator. The predators help to keep the number of animals and

plants balanced. As you read, if predators are removed, the living things they eat may increase so much that the animals will starve or become pests.

If nature is not disturbed, plant and animal communities keep themselves balanced. They have to change continually to keep the balance. Sometimes weather conditions will cause the balance to be lost. Sometimes man disturbs it. Every time their environment changes, the plant and animal communities must change, too.

You have studied the food chain and the food pyramid. You have learned how nature keeps communities of living things balanced. In the next section you will take a close look at some of these communities.



**Think and write.**

Look back in Section I if you have trouble remembering the answers.

1.49 What are the kinds of living things in a community?  
a. \_\_\_\_\_ c. \_\_\_\_\_  
b. \_\_\_\_\_

1.50 What is the job of each kind of living thing in 1.49? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1.51 How do plants make food? \_\_\_\_\_

1.52 Explain what happens in the process of plants making food.  
\_\_\_\_\_  
\_\_\_\_\_

1.53 With what four resources did God make your environment just right for living things? \_\_\_\_\_  
\_\_\_\_\_

1.54 Tell in your own words what "balance of nature" means.  
\_\_\_\_\_  
\_\_\_\_\_



Teacher check \_\_\_\_\_  
Initial Date



Review the material in this section to prepare for the Self Test. The Self Test will check your understanding of this section. Any items you miss on this test will show you what areas you need to restudy.

## SELF TEST 1

**Match these items** (each answer, 2 points).

- |       |       |                        |    |                              |
|-------|-------|------------------------|----|------------------------------|
| 1.01  | _____ | chlorophyll            | a. | disappeared                  |
| 1.02  | _____ | plant-eating consumers | b. | make food                    |
| 1.03  | _____ | extinct                | c. | plant process of making food |
| 1.04  | _____ | ecology                | d. | green in plants              |
| 1.05  | _____ | predators              | e. | nature's clean-up crew       |
| 1.06  | _____ | web of life            | f. | eat producers                |
| 1.07  | _____ | photosynthesis         | g. | all life is connected        |
| 1.08  | _____ | environment            | h. | feed on other animals        |
| 1.09  | _____ | decomposers            | i. | study of the home            |
| 1.010 | _____ | producers              | j. | where you live               |

**Write the correct word in each blank** (each answer, 2 points).

sun	light	ecologist
bacteria	mold	water
communities	population	food chain
God	soil	air
water		

- 1.011 The scientist who studies ecology is an \_\_\_\_\_ .
- 1.012 People belong to the human \_\_\_\_\_ .
- 1.013 One decomposer is \_\_\_\_\_ .
- 1.014 All energy comes from the \_\_\_\_\_ .
- 1.015 Plants and animals live together in \_\_\_\_\_ .
- 1.016 To show how your food gets energy you can make a \_\_\_\_\_ .
- 1.017 A growing plant needs a. \_\_\_\_\_ ,  
b. \_\_\_\_\_ , c. \_\_\_\_\_ , and  
d. \_\_\_\_\_ .
- 1.018 Small decomposers seen only under a microscope are \_\_\_\_\_ .
- 1.019 Temperatures are neither as hot nor as cold near \_\_\_\_\_  
\_\_\_\_\_ as they are inland.
- 1.020 Resources were given by \_\_\_\_\_ .

**Follow directions carefully** (each answer, 2 points).

Draw a line under each of the following words that is a producer. Circle each plant-eating consumer. Draw a box around each predator. Put an X on each decomposer.

1.021 grasshopper

1.022 birds

1.023 bear

1.024 fungi

1.025 clover

1.026 water lily

1.027 rabbit

1.028 frog

1.029 cow

1.030 mold

1.031 cat

1.032 spider

1.033 snake

1.034 termite

1.035 orange tree

**Complete these sentences** (each answer, 3 points).

1.036 Air and water store \_\_\_\_\_ for the earth's use.

1.037 All of your light and heat come from the \_\_\_\_\_.

1.038 A food chain shows how you get your \_\_\_\_\_.

**Complete these items** (each answer counts 5 points).

1.039 The *balance of nature* means \_\_\_\_\_  
\_\_\_\_\_.

1.040 What does the web of life mean? \_\_\_\_\_  
\_\_\_\_\_.

1.041 Explain why a successful life system must have more producers than consumers. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.



Possible Score 100

My Score \_\_\_\_\_

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## II. MAN DEPENDS ON COMMUNITIES

In each environment all plants and animals live together in communities. In these communities, each living thing has its purpose and place. You will see how important each one is.

In Section II you will read about different communities. You will find that all communities have some things that are the same. You will find that living things depend on each other in all communities.

### SECTION OBJECTIVES

**Review these objectives.** When you have completed this section, you should be able to:

6. Tell about some communities of living things and how the living things depend on each other.

**Restudy these words.**

beaver  
cactuses  
crayfish  
dew  
egret  
grouse

habitat  
mesquite  
moisture  
otter  
plankton  
sagebrush

saguaro  
snail  
spoonbill  
squid  
vulture

### WATER COMMUNITIES

Water communities are found in several different environments.

**Saltwater communities.** The largest saltwater community is the one found in saltwater oceans and seas. Some small communities are near the surface, where sunlight can reach them. Others are in deeper water, down to three hundred (300) feet where the water is fairly warm and ocean plants grow. Since plants grow there, you will find animals, also.

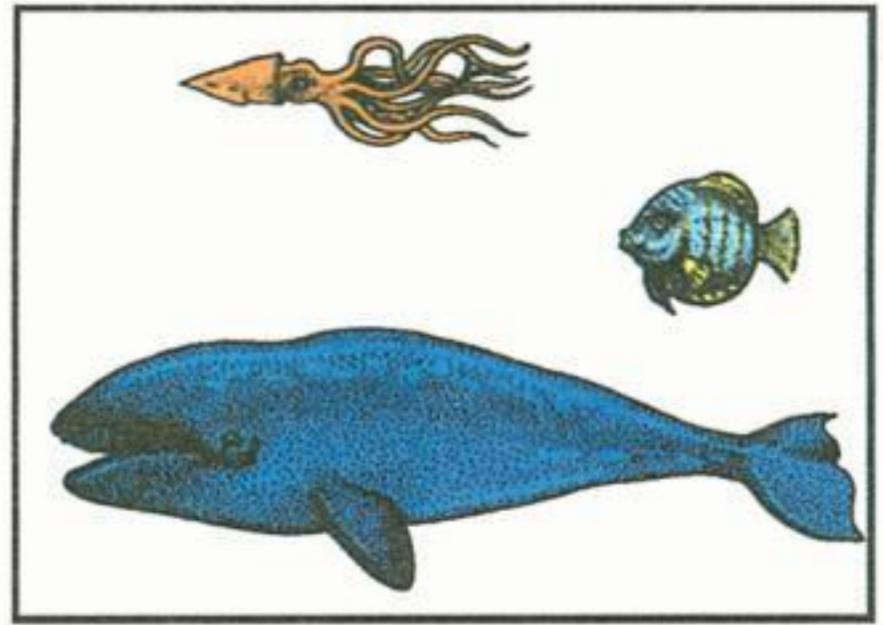
At three thousand (3,000) feet below the surface of the water, it is very dark. No plants are there. Any animals that live there are

predators. The animals they eat feed on plants near the surface. Some plants and animals live near the shore because they can live in both water and air.

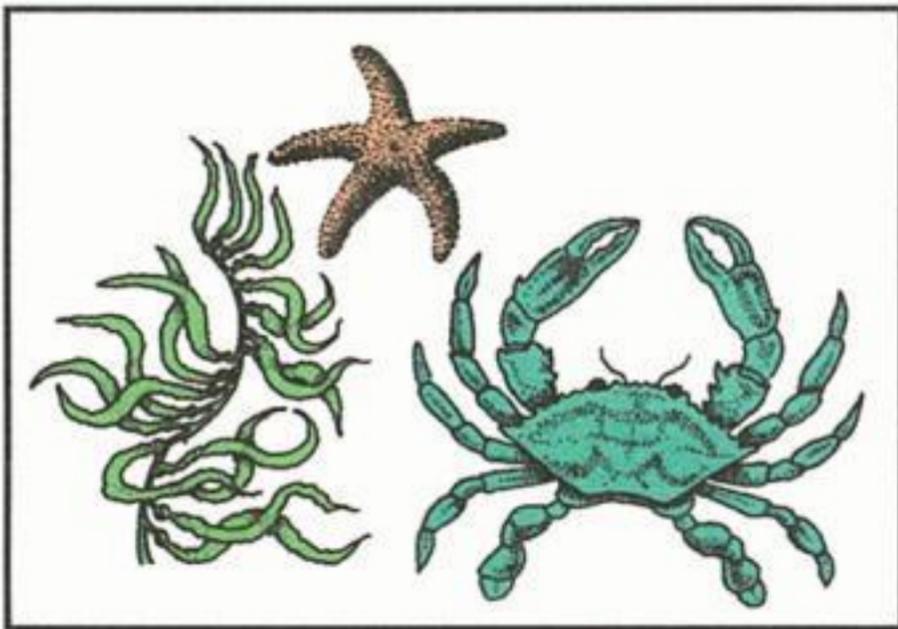
Living things in the sea are of three groups. Those which can swim strongly against a current include fishes, **squid**, and whales. The second group is made up of all the plants and animals that live on the floor of the ocean. You would find there such life as seaweed, crabs, and starfish.

The third group is **plankton**, which is the hardest to find, but is the most important. Plankton is

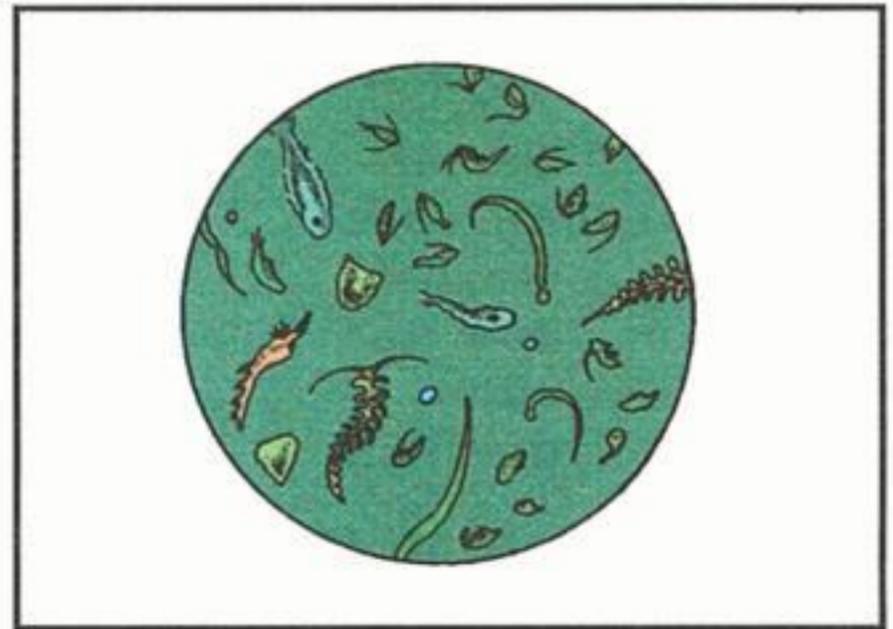
found floating all through the waters. Plankton is really thousands of kinds of tiny plants and animals. The plants are so small that they can be seen only with a microscope. The larger plankton animals eat the plankton plants which have nutrients and energy in their cells received from sunlight. The fish in turn eat the plankton animals and receive the life-giving energy they need. Many sea animals depend on plankton for life.



**Strong Swimmers**



**Ocean-Floor Life**



**Plankton**



**Search and draw.**

2.1

If you live by the sea, you can observe many kinds of sea life which has been brought to shore by the tides. You may find a pool which is a complete community of sea life.

Take a pencil and paper with you as you walk along the beach. Draw as many forms of sea life as you can find. Find out about them by looking up sea and shore life in books.

If you do not live near the shore, read nature books. Make lists of sea life in the three groups you have just studied.

- 2.2 Try to find out which of these animals that you have listed are producers, which are primary consumers, and which are predators.
- 2.3 Make a food chain of sea life.



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**Learn about stillwater life.**

Stillwater ponds and marshes offer another treasure chest of living things. Catch some animals and bring them to your classroom. In this way you can observe them closely. This project is one that you should work on with several other classmates and with the permission of your teacher.



**What to do before you go:** In your library, find books about pond and marsh communities. Read about the kinds of life on the list. See what the animals look like in different stages of growth. Find as many pictures as you can so that you will be able to recognize what you see on your field trip. Compare what you find with the information your classmates find.

- |                   |           |
|-------------------|-----------|
| Young dragonflies | Tadpoles  |
| Water bugs        | Parasites |
| Water striders    | Crayfish  |
| Beetles           | Turtles   |
| Snails            | Snakes    |
| Algae             |           |

Write your findings on other paper. Keep your papers with this page in your LIFE PAC.

Since you do not want to hurt the animals you bring in, you will want to be careful how you catch them and care for them.

**These supplies are needed:**

one or more kitchen strainers (lengthen the handles by attaching them to long sticks or broom handles)  
a number of wide-mouthed jars — one-liter, two-liter, and four-liter sizes  
pans  
an aquarium if one is available  
a hand magnifying glass  
some cloth or netting to put over jars  
some string  
a microscope (when you are back in the classroom)

**Who may go:** Your teacher or some other adult, you, and your classmates who are working with you on this project. *Do not go alone.*

**What to wear:** Old clothes and shoes that will not be damaged if they get wet.

**Safety rules:** Be sure you stay with the group and follow carefully any rules your teacher makes for the field trip.

**Where to look:** ponds, sluggish streams, drainage ditches, pools in parks, fish pools in home gardens. Do not take animals from swiftly running streams. They will not live in your still water aquariums.

**What to look for:**

1. **Water insects.** They float or live on the surface of the water. Look on the stalks of cattails and other plants. Search the undersides of leaves for insects in their early stages.
2. **Fish.** These may be along the shore line among the underwater plants.
3. **Snails.** You will find them among the underwater plants and in many of the places where you find insects.
4. **Amphibians.** These may be found among water plants and near the edge of the pond.



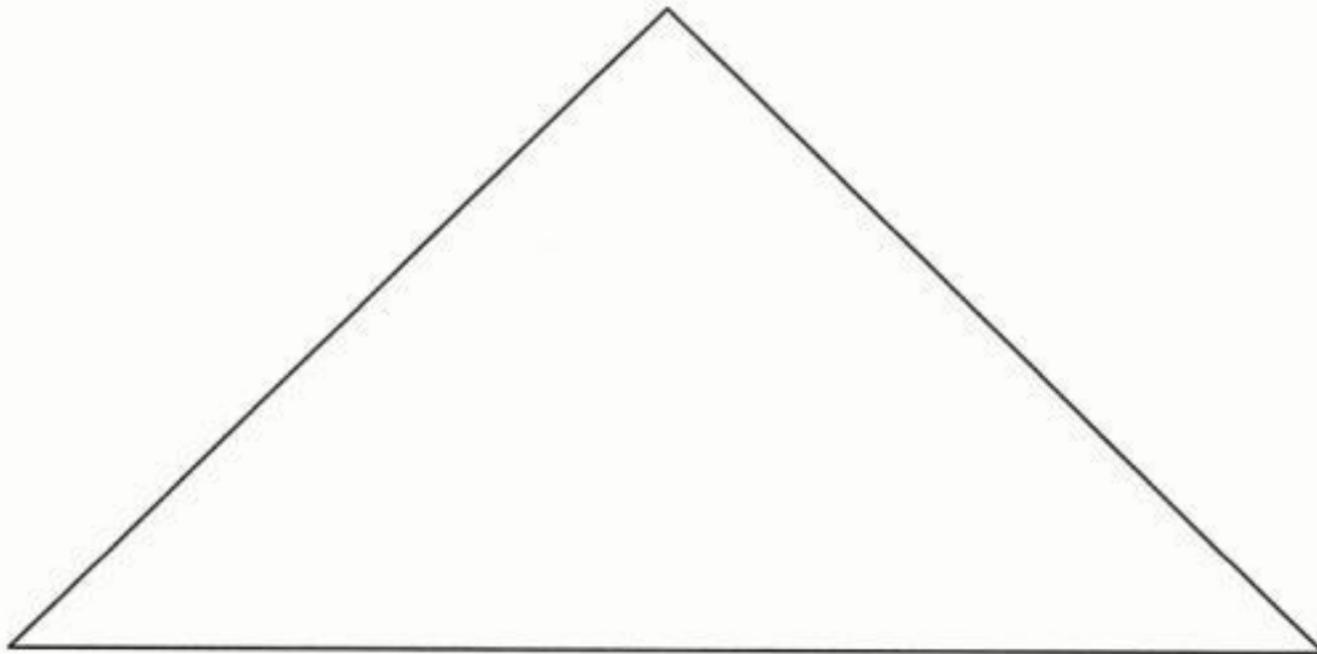
**What to do:** With your long handled kitchen strainers, scoop up as many different kinds of animals as you can find. Put them with some pond water in the jars. Bring back to school only one of each kind. Be sure to bring some water plants and algae, too. Sort your animals and put them into separate containers. (Pans, bowls, glass jars. If you leave them mixed together, some may be eaten by morning!) Keep your containers away from radiators and direct sunlight. Cover jars with netting tied with string. Be sure any really lively specimens are covered by netting.

- 2.4 Look at a drop of pond water under a microscope. Describe what you see.

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- 2.5 Observe your collection carefully for two or three days. Feed them with flies, small insects, and algae. Notice which ones are primary consumers and which are predators. Build one food pyramid for your stillwater life.



- 2.6 Make two food chains to show what you have learned about still-water communities.

- 2.7 A dragon fly has some other names which tell something about its nature. Find out why it is known as "the terror of the insect world." Write about the dragon fly on the lines.

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When you are through observing them, return your animals to their natural habitat, so they can continue doing their jobs.



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**Answer true or false.**

- 2.8 \_\_\_\_\_ The largest saltwater communities are found in oceans and seas.
- 2.9 \_\_\_\_\_ Many plants grow at three thousand (3,000) feet below the surface of the ocean.
- 2.10 \_\_\_\_\_ Predators are thousands of tiny ocean plants and animals.
- 2.11 \_\_\_\_\_ All plants and animals need air and water.

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**River community.** Another community is the river community. Rivers are another valuable resource. All through history, men have used rivers for water, transportation, food, and water power. Today you still depend on rivers for the same things.

In America's early years, hunters and trappers found the rivers rich with fur-bearing animals. Many of the animals were killed for their

furs.

A river provides a **habitat** for many kinds of living things. Plants, insects, and fish live in the water, on the surface, and on the riverbanks. You will find reptiles and beautiful birds. Each one is a link in one of the many river food chains. Each fills its place as a producer, consumer, or decomposer.

One member of the "clean-up crew" that can be found near almost

every riverbank or pond is the **crayfish**. He helps to keep the riverbank clean by feeding on the remains of dead fish or other animals. Raccoons, **otters**, and some other animals and birds find the crayfish a tasty meal. So he comes out only at night to do his work.

An animal with an important job to do is the **beaver**. He stays busy building dams. He uses branches,

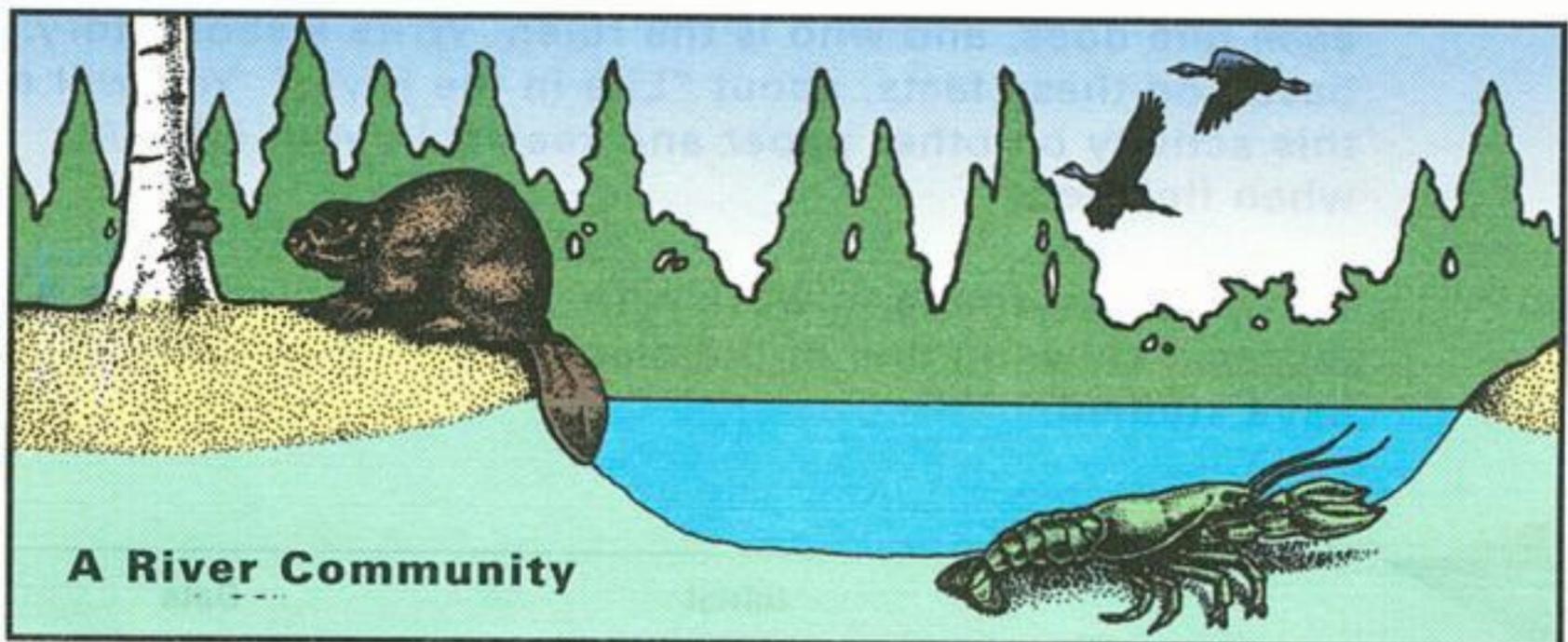
sticks, and young trees which he cuts with his sharp teeth. These dams help conserve the water supply by holding back rushing waters in flood time. His dams also make ponds which help keep rivers from drying up in dry seasons.

Great flocks of waterfowl visit rivers each year in spring and fall. Other birds such as **egrets** and **spoonbills** live by the river all year long.



**Write the correct answer on each line.**

- 2.12 A river provides a habitat for many kinds of \_\_\_\_\_ things.
- 2.13 A habitat is the place where a(n) a. \_\_\_\_\_ or a(n) b. \_\_\_\_\_ naturally lives or grows.
- 2.14 One member of the "clean-up crew" that can be found near almost every riverbank or pond is the \_\_\_\_\_.
- 2.15 An animal that stays busy building dams is the \_\_\_\_\_.



## FIELD COMMUNITIES

Field communities may be near rivers. Some fields have been made into pastures where cows or sheep graze. The wild fields that have never been upset by man are the best in which to see the field communities.

If you know where to find a wild field you would probably find the rabbit, as well as many of his family there. The mother rabbit makes her nest in the field and lines it with fur to keep her babies warm. In winter a rabbit will make a little cave in a

snowbank away from the wind. In the cave the rabbit will be warm in spite of icy weather outside.

Prairie dogs live in underground homes. They live in groups, and their homes are really like a house with many rooms. When they build, they never forget to have a back door for a safety exit.

You have heard of animals which sleep through the winter, but some of the field dwellers are "summer sleepers." The chipmunk is one.



**Write the letter for the matching answer on each line.**

- |      |       |                         |                |
|------|-------|-------------------------|----------------|
| 2.16 | _____ | snowbank home in winter | a. prairie dog |
| 2.17 | _____ | underground home        | b. chipmunk    |
| 2.18 | _____ | "summer sleeper"        | c. squid       |
|      |       |                         | d. rabbit      |



**Read and write.**

- 2.19 Read about the social life and work life of the honeybee hive. Find out how many kinds of bees there are, what job each one does, and who is the ruler. Write a short story, based on these facts, about "Life in the Hive." You will do this activity on other paper and keep it in your LIFE PAC when finished.
- 2.20 Choose a classmate to work with you. Together, make a diorama showing one of the plant-animal communities you have studied.



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## DESERT COMMUNITIES

Deserts are in parts of the earth where there is very little rainfall. Here, there are not enough plants to support a human community.

However, communities of living things are in all of the deserts in the world. Since these areas are very hot and dry, the animals living there get most of their **moisture** from their food. Some of the plants take the night **dew**, and animals lick the dew from their leaves. After a rain, many kinds of plants come to sudden life.

**Cactuses, mesquite, and sagebrush** are able to survive in the desert. Mesquite sends its roots down to 100 feet, where it reaches underground streams. Cactuses store water in the main part of the plant and do not give up their moisture to the dry air.

Large mammals can live in the

desert, such as the camel and the North American mule deer. Some smaller mammals are also found here. Among them are jack rabbits, prairie dogs, pack rats, and kangaroo rats.

You will also find birds in the desert. Elf owls live in the huge **saguaro** cactus, and catch insects and small animals for food. Woodpeckers peck out holes in the cactuses, then the elf owls move in to make their nests in the holes.

Turkey **vultures** are one kind of decomposer in the desert. They feed on dead animals. Termites, also members of the clean-up crew, are in the desert, too. Ants, beetles, grasshoppers, and even **snails** live in the desert.

So you see, the desert is a true community with producers, consumers, and decomposers.



### Make a terrarium.

A desert terrarium is fun to make and interesting to watch. If you wish to try it, you will find complete instructions for making one in the encyclopedia.



### Write the answer.

2.21

How are desert plants different from others you have studied? \_\_\_\_\_

\_\_\_\_\_

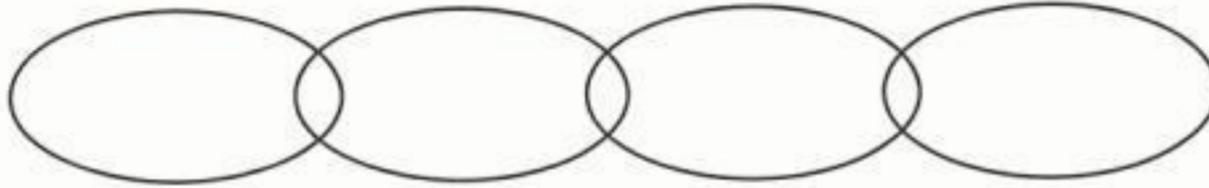
\_\_\_\_\_



## Complete these activities.

2.22

Make a desert food chain.



2.23

Give an example of desert life.

- a. producer \_\_\_\_\_
- b. consumer \_\_\_\_\_
- c. predator \_\_\_\_\_
- d. decomposer \_\_\_\_\_

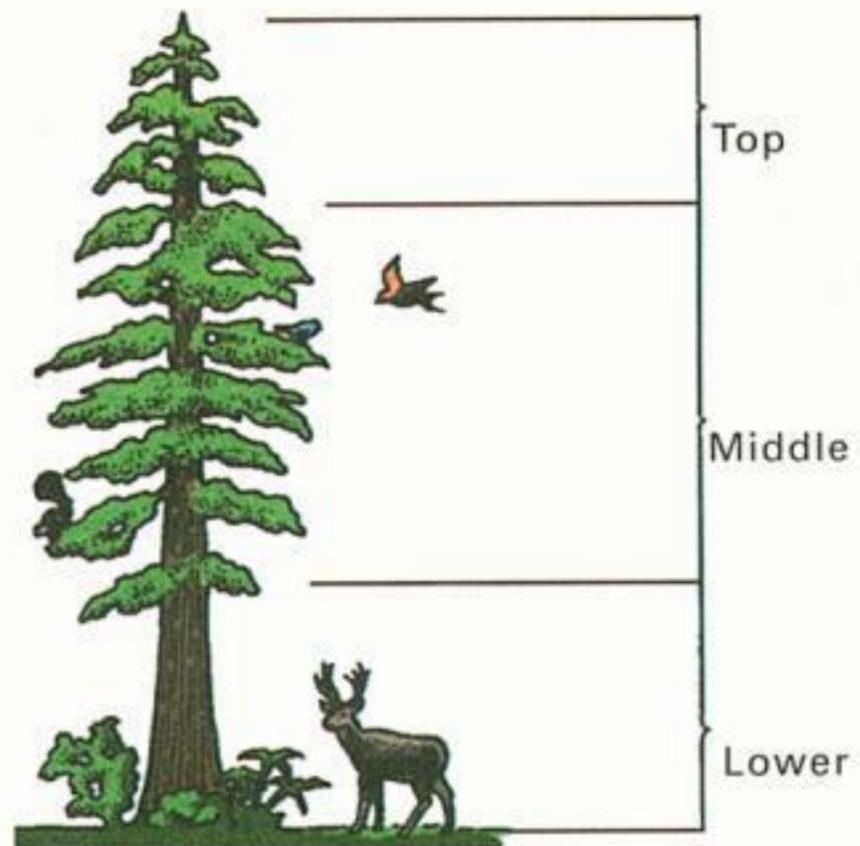
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## FOREST COMMUNITIES

A forest is a very special kind of community. The tall trees spread their branches over the forest dwellers like rulers protecting their kingdom.

In a forest, plants and animals live on three levels. The upper branches are the *top level*. The amount of light coming through the leaves changes all of forest life.

Younger trees, bushes, and shrubs are at the *middle level*. Most older trees have long bare trunks with their branches spreading at the top, which leaves room for plants and young trees to grow. Most birds and climbing animals are found at these two top levels.



At the *lower level* are ferns and berries. Many animals roam on the forest floor.

A forest looks very peaceful from a distance. If you were to walk softly through a forest with your eyes and ears open, you would be surprised at the activity to be found there.

You would recognize many of the forest dwellers. You would see squirrels, chipmunks, porcupines, raccoons, and opossums. You might startle **grouse**, deer, foxes, bears, and members of the cat family. Watch where you step, because hundreds of different snakes live in

the forest.

Birds flit busily from branch to branch and down to the forest floor. They are looking for the numerous worms and berries to be found there. High up in the tallest tree you might see an eagle's nest. A sleepy owl may wink at you if you disturb him.

The flowers you find will vary in different parts of the country. Insects, caterpillars, worms, and fungi are found on the plants and in the fallen logs.

The animals and plants you find are either producers, consumers, or predators, as in every community.



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**Do these activities.**

2.24

Make a forest food chain.

2.25

Name the three levels of a forest community.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

2.26

Read and write about one forest animal community. Use other paper.



Teacher check \_\_\_\_\_

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# HUMAN COMMUNITIES

Go back and look at the drawing you made in Activity 1.26. You drew your environment that is the things that surround you and are a part of your life. In your environment you belong to a community of living things.



**Think and write the answer.**

2.27

What populations of living things are in your community?

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First of all, people are part of your community. Like other living things, you cannot live alone. You depend on other people for your needs.



**Think and write.**

2.28

Who provides food for you? \_\_\_\_\_

2.29

Where do they buy it? \_\_\_\_\_

2.30

Who raised it? \_\_\_\_\_

2.31

Who provides your clothing and other needs? \_\_\_\_\_

2.32

Where do they buy them? \_\_\_\_\_

2.33

Who supplies the storekeeper? \_\_\_\_\_

---

You can see that you and the other humans in your community are dependent on each other for the needs of life. On what other living things do humans depend?



**Think and write.**

- 2.34 How does the farmer get the food he sells? \_\_\_\_\_  
\_\_\_\_\_
- 2.35 What does he have to depend on the plant to do? \_\_\_\_\_  
\_\_\_\_\_
- 2.36 Where does the plant get energy to manufacture food?  
\_\_\_\_\_
- 2.37 What is the name of the chain of energy from the sun to the  
plant to the animal? \_\_\_\_\_
- 2.38 Do you need animals in the human community? \_\_\_\_\_  
\_\_\_\_\_
- 2.39 What things do animals provide for humans? \_\_\_\_\_  
\_\_\_\_\_
- 2.40 Do animals depend on humans? \_\_\_\_\_  
\_\_\_\_\_
- 2.41 Give some examples. \_\_\_\_\_  
\_\_\_\_\_
- 2.42 What responsibility did God give to humans concerning  
living things? \_\_\_\_\_  
\_\_\_\_\_

Since we are made in the image of God, the human community has some needs that plants and animals do not have. Like other living things, we have homes and families. But our parents provide ways in the home for us to learn about God and His love. They provide churches where we can hear God's Word preached. They provide schools and libraries in which we learn to use

language. They build museums so we can learn about things not always found in our own environment. They provide ways for us to learn to do many things for ourselves, using special tools. All of these things we need and use because God made human beings with intelligence and the ability to learn from each other.



**Think and write.**

- 2.43 Since you are made in the image of God, you need fellowship or companionship with God. How is this need met? \_\_\_\_\_
- 2.44 You need love and a feeling of safety. How is this need met?  
\_\_\_\_\_

- 2.45 You have a desire to know more about the world. How is this need met? \_\_\_\_\_
- 2.46 Animals are able to communicate with each other, but man has been able to develop ways of not only speaking, but writing and keeping records. You call this \_\_\_\_\_.
- 2.47 Man has also used his intelligence to invent things to make his life more comfortable. To do this, he learned to make \_\_\_\_\_, or things to work with.
- 

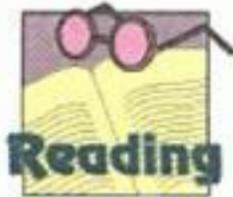
All of these needs are met with God. Man is special. In this section of your LIFE PAC, you have learned treasures that God has given only to man. Man was made in the image of just a little bit about God's creation.

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**Think and write.**

- 2.48 What kinds of communities have you studied in this section?
- |          |          |
|----------|----------|
| a. _____ | e. _____ |
| b. _____ | f. _____ |
| c. _____ | g. _____ |
| d. _____ |          |
- 2.49 Name four ways in which the communities are alike.
- |          |
|----------|
| a. _____ |
| b. _____ |
| c. _____ |
| d. _____ |
- 2.50 How is the human community like the others?
- \_\_\_\_\_
- \_\_\_\_\_
- 2.51 How is the human community different from the others?
- \_\_\_\_\_
- \_\_\_\_\_



**Do this reading activity.**

2.52

The letters *ou* and *ow* often sound like the *ou* in *out* or the *ow* in *clown*. Sometimes the *ow* sounds like the *ow* in *grow*. Write the words from the list under the words which have the same sound.

throw  
owl  
flower  
count  
shadow

tomorrow  
blower  
slower  
spout  
sorrow

how  
blouse  
scout  
yellow

frown  
show  
borrow  
shower

**out**

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

**clown**

- e. \_\_\_\_\_
- f. \_\_\_\_\_
- g. \_\_\_\_\_
- h. \_\_\_\_\_
- i. \_\_\_\_\_

**grow**

- j. \_\_\_\_\_
- k. \_\_\_\_\_
- l. \_\_\_\_\_
- m. \_\_\_\_\_
- n. \_\_\_\_\_
- o. \_\_\_\_\_
- p. \_\_\_\_\_
- q. \_\_\_\_\_
- r. \_\_\_\_\_



Review the material in this section to prepare for the Self Test. The Self Test will check your understanding of this section. Any items you miss on this test will show you what areas you need to restudy.

## SELF TEST 2

**Complete the statements using words from this list** (each answer, 2 points).

amphibians	habitat	photosynthesis
producer	mammal	plankton
communities	predator	

- 2.01 The natural place for an animal or plant to live is called its \_\_\_\_\_.
- 2.02 An animal that eats other animals is a \_\_\_\_\_.
- 2.03 A living thing that gets energy directly from the sun is a \_\_\_\_\_.
- 2.04 Plants and animals live together and depend on each other in \_\_\_\_\_.
- 2.05 Tiny plants floating in the ocean are called \_\_\_\_\_.
- 2.06 Plants make food by a process called \_\_\_\_\_.

**Match these items** (each answer, 2 points).

- |       |       |                  |    |                              |
|-------|-------|------------------|----|------------------------------|
| 2.07  | _____ | tiny sea animals | a. | river community              |
| 2.08  | _____ | ecology          | b. | plant process of making food |
| 2.09  | _____ | otter            | c. | helps things to rot          |
| 2.010 | _____ | a decomposer     | d. | all life is connected        |
| 2.011 | _____ | squid            | e. | plankton                     |
| 2.012 | _____ | photosynthesis   | f. | ocean community              |
| 2.013 | _____ | environment      | g. | study of the home            |
| 2.014 | _____ | web of life      | h. | cattails                     |
|       |       |                  | i. | where you live               |

**Complete these statements with one or more words** (each answer, 3 points).

- 2.015 The huge saguaro cactus provided a home for the \_\_\_\_\_.
- 2.016 A desert plant called mesquite puts its \_\_\_\_\_ down over 100 feet to find water.
- 2.017 Sometimes men damage the forest by \_\_\_\_\_ all the trees.

2.018 The human community has some needs that plant and animal communities do not have because man is made in the \_\_\_\_\_.

**Complete these activities** (each answer, 3 points).

2.019 Name three groups of water animals in the ocean.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

2.020 Name three kinds of life in all communities.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

2.021 Name four resources that God has given to all life on earth.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

2.022 Name two desert animals.

a. \_\_\_\_\_

b. \_\_\_\_\_

2.023 Name two river animals.

a. \_\_\_\_\_

b. \_\_\_\_\_

2.024 Name two field animals.

a. \_\_\_\_\_

b. \_\_\_\_\_

2.025 Make a food chain of one community you have studied.

2.026

Name the three levels of a forest community.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

	Possible Score 100	My Score _____
	Teacher check _____	Initial _____ Date _____

### III. MAN TRIES TO SAVE HIS ENVIRONMENT

You have learned that everything you use comes from a resource of God. When white men came to America, they found a land rich in resources. They were amazed at the streams and fresh clean air. Beautiful forests, rushing rivers, and miles of grasslands sheltered every kind of wildlife.

The settlers began chopping and burning the forests to build houses and to start farms. They butchered the buffalo and plowed up the grasslands. Before many years had passed, much of the land's resources had been wasted.

Probably the settlers thought that there were enough forests and wildlife to last forever. They never dreamed that someday Americans would begin to run out of water. They never expected that the air

over such a large land could ever become **polluted**. They never thought that someday the soil would wear out. But all of those things happened.

American men and women, boys and girls face a problem today. Their problem is how to keep the country clean and stop the waste. You can try to **conserve** or use wisely the remaining resources. Some of the resources need to be preserved, or saved.

In this section of your LIFE PAC, you will study the problem caused by man's carelessness. Then you will think of some ways to help man keep in balance with his environment. You should have some fresh ideas about solving this problem.

## SECTION OBJECTIVES

**Review these objectives.** When you have completed this section, you should be able to:

7. Tell ways that man has been careless with the environment.
8. Tell ways that the resources can be conserved.
9. Tell ways that the resources can be preserved.

**Restudy these words.**

conserve  
contour  
erosion  
extinct

geyser  
nuclear  
pollution  
preserve

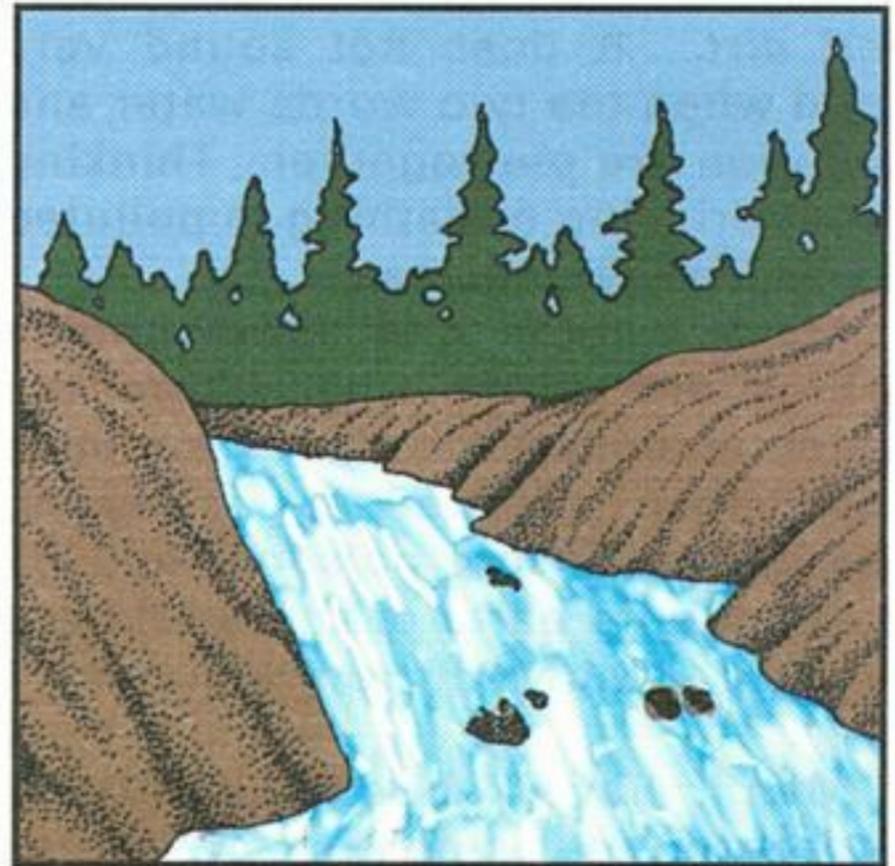
sequoia  
smog  
solar

## CARELESSNESS

You know that good soil is needed for life. Plants which provide us with food get nutrients from the soil. Soil is a precious resource to all living things. Carelessness is often the cause of two serious problems called **erosion** and **pollution**.

Much of the soil has flowed down creeks and rivers. Muddy rivers and streams are signs of a serious problem called erosion. Erosion is the washing away of the good top soil containing most of the nutrients. Good soil is lost. It often is the result of carelessness. When all plants are removed, leaving the soil loose, tragic things can happen. A hard rain may wash away the soil. Later, the wind may pick up and carry away the soil in a dust storm.

Planting the same crop over and over on the same piece of land is careless farming. Good soil contains nutrients necessary to your



health. When soil is worn out by constant planting of the same crop, you no longer get those good nutrients in your food. It takes a long time for good soil to be made, but just a short time for it to be destroyed.



### Ask an expert.

3.1

Find out who the agricultural agent is in your county. He has equipment to test soil. He tells farmers what to add to the soil to improve it. Ask him to speak to your class. Bring a soil sample (a small bottle of soil) from your yard and ask him to test it for you. Write on other paper what he tells you about soil.



Teacher check \_\_\_\_\_

Initial

Date

The word *pollution* means *waste and dirt*. It does not sound very good when the two words water and pollution are put together. Thinking about drinking or bathing in polluted water is very unpleasant.

Many wildlife and some human beings are now living where the water is polluted. Water supplies have been polluted by factories, sewage, by insect poisons, and by trash. Some parts of the world are even in danger of running out of water.

Men have been emptying underground supplies of water without refilling them. Now a serious water problem has developed. Scientists are not sure what to do about it.

Even the oceans are being polluted. Sometimes ships dump waste and trash into the oceans. When you walk along the beach you can often find trash washed ashore

by the tides.

The air over many of the cities is very unhealthy to breathe. Air pollution, called **smog**, sometimes hangs over a whole area of the country for days. The gases from automobiles go into the air and become a serious problem, too. Factories put waste materials into the air. Even outer space has become cluttered with trash because many objects have been sent up and left to go around the earth.

Some animals and birds lived in the past that you will never see. They have become **extinct**. Other animals are in danger of becoming extinct.

Some living creatures become extinct because of changes in nature. Floods, earthquakes, storms may change environments. Sometimes humans destroy animal habitats.



**From the following list of words, write the correct answer on each line.**

erosion      extinct      pollution      carelessness

- 3.2 Muddy rivers and streams are signs of a serious problem called \_\_\_\_\_.
- 3.3 Waste and dirt in the air or water are called \_\_\_\_\_.
- 3.4 Animals and birds that lived in the past but do not live today have become \_\_\_\_\_.



**Find a list of the animals and birds that are becoming scarce.**

- 3.5 They are called endangered species. Some of them are already so rare that you may never have heard of them. Write the list on other paper.



Teacher check \_\_\_\_\_

Initial

Date

## CONSERVATION

Man is beginning to understand that he has no right to destroy the resources given to him by God. He is learning how to **conserve** them, and to replace some of them. For instance new forests have been planted. These new forests will be a help to the wildlife as well as to humans.

Farmers have found ways to conserve and to enrich the soil. They no longer plow in straight lines on hills. Instead, they do **contour plowing**. They never leave a field open but plant cover crops to hold

the soil. They have learned to make the soil better by putting nutrients back into worn-out soil.

People in small communities are trying to get wildlife to return by providing habitats for the animals. They are leaving some thickets, weedpatches, and marshes undisturbed so that wildlife will return. Farmers try to get animals to come by leaving strips of natural growth at the edges of pastures and fields. These areas also help the farmer by protecting his field from erosion. When small farm ponds are

dug and stocked with fish other wildlife soon appear. An area must be clean if animals are to come. A clean area will help wildlife to return to a good natural environment.

The government is trying to solve some of the country's problems. In 1972 Congress set a goal of making the nation's rivers and lakes clean enough to swim and fish. The clean-up will also keep drinking water from becoming polluted. The U.S. Environmental Protection Agency

manages the program.

Water experts are also learning how to build up low ground water supplies. As forests are replanted, underground water levels begin to rise. Some scientists are working on taking the salt out of ocean water and making it drinkable. Others are planning better land use along the upper parts of streams and rivers. They hope by planning better land use to prevent floods along the rivers.



**Write letters.**

3.6

Find out what conservation laws are being passed. Write to your senator and representatives who are in Washington, D.C. Write to the representatives from your town in your state capital. Have your teacher help you with your letters. List the names of the people to whom you wrote, and the dates of your letters. If you get a reply, put that date here also.

**Date**

**Written to**

**Answer**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Think of ways to save water.**

3.7

Write down three ways you and your friends can save water.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_



Teacher check \_\_\_\_\_

Initial

Date

### Think about reading.

3.8 When you divide words into syllables, a few rules make your work easier.

When a vowel is followed by *r*, the vowel and *r* are in the same syllable. Divide these words into syllables by drawing a line between the syllables.

Example: for/get

- a. barber
- b. margin
- c. orphan

- d. normal
- e. turkey
- f. harness

3.9 When two vowels are pronounced as one sound, those two vowels are always in the same syllable. Divide these words into syllables by drawing a line between the syllables.

Example: joy/ful

- a. daughter
- b. boiler
- c. oyster

- d. counter
- e. autumn
- f. pointing

3.10 Consonant digraphs such as *ch*, *sh*, *th*, and *wh* are always in the same syllable. Divide these words into syllables by drawing a line between the syllables.

Example: noth/ing

- a. kitchen
- b. teacher
- c. brushes

- d. ditches
- e. preacher
- f. weather

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Scientists are concerned about the amount of energy being used today. Electricity supplies the power for lights, heat, air conditioning, and many other comforts. Oil is used to run many power plants. The oil supply in your country is a smaller supply than what is used. Your nation buys oil from other countries.

Oil is used in other ways, too. Cars are run with gasoline. Most cars you see going down the street are using gasoline.

Oil is used in the power plants that make the electricity. Gasoline is made from oil. The oil supply in your country does not equal all that is needed.

The problem is either to find more oil by drilling under the earth or to stop using so much. If you stop using oil, another form of energy must be used in place of oil. The pipeline from Alaska is bringing more oil.

The oil that is used must be

conserved. To use wisely the oil that is left is very difficult. Some people are buying cars that use less gasoline. Others are sharing rides to work with their friends. Some people are keeping their homes cooler in winter. These efforts are only a few ways to help save oil.



### Think and write.

3.11

Make a list with a friend of ways to save energy. Use other paper.



Teacher check \_\_\_\_\_

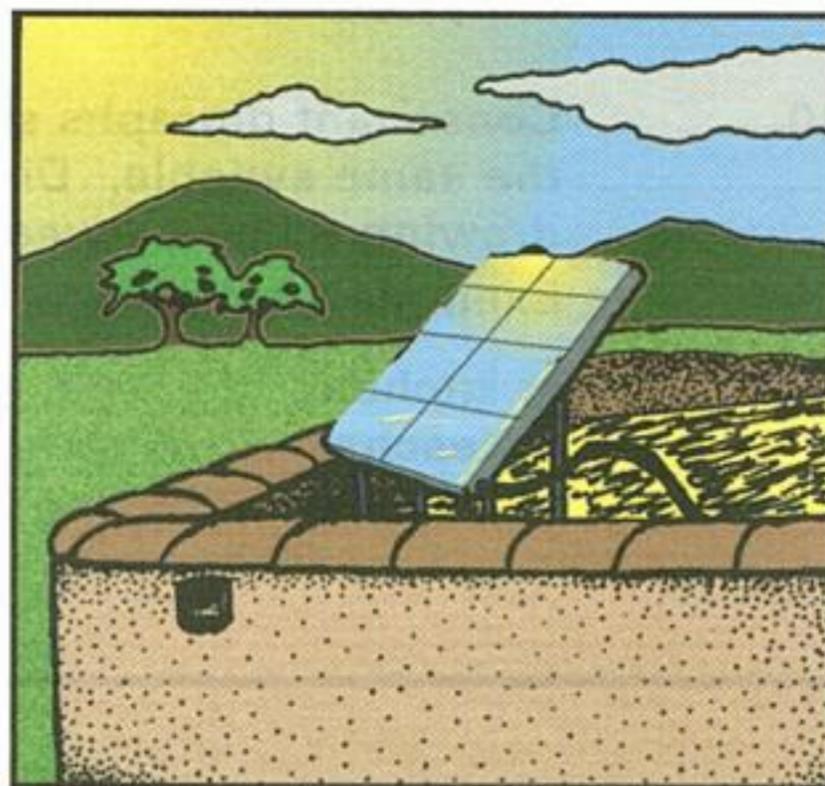
Initial

Date

Scientists are looking for ways to provide other kinds of energy. Rich underground deposits of coal can be used. Coal is mined before it is used for energy. Power plants in some parts of the country are being run by **nuclear** energy. Another kind of energy is very clean. Scientists are trying to learn how to trap it and use it. They are working on ways to use the energy from the sun, called **solar** energy, to heat houses and water.

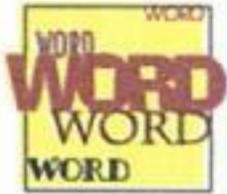
In Israel water is heated in many homes by solar energy. For ten months a year, the heat from the sun is hot enough to heat water. The water runs through pipes called solar collectors. The warm water is stored in a container on the roof of a home.

Solar ovens have been invented, too. Many mirrors are used to aim



**Water is heated by solar energy in Israel.**

the heat from the sun onto the middle of the oven. Of course, the oven has to be outside. People are trying to find ways to save expensive energy and to use clean energy like solar energy.



Match these words and meanings by writing the letter for the correct answer on each line.

- |      |       |                |  |
|------|-------|----------------|--|
| 3.12 | _____ | coal           | a. energy from the sun                             |
| 3.13 | _____ | nuclear energy | b. energy from water                               |
| 3.14 | _____ | solar energy   | c. underground energy source                       |
| 3.15 | _____ | electricity    | d. atomic energy                                   |
| 3.16 | _____ | oil            | e. supply does not equal use                       |
|      |       |                | f. supplies power for lights, cooling, and heating |
- 

## PRESERVATION

In *preserving* certain resources, men are making sure that they will have the resources in the future. By cutting forests wisely, the young trees are preserved. They will grow and provide forest products when other young trees have been started. By replanting forests, men are looking ahead to future needs.

In national parks, wonders of nature are being preserved. The giant **sequoia** trees in California and the **geysers** in Yellowstone National Park are special treasures that are preserved for people to enjoy. The Everglades National Park in Florida is an unusual and interesting part of your environment.

In every part of your country, natural wonders are being preserved to be enjoyed by everyone.

Some of the treasures with which God has supplied His earth are gone, and some are in danger of disappearing. You have the chance to *conserve* and *preserve* what is left.

The students in the story at the beginning of your LIFEPAK had felt responsible for conserving God's resources. They had collected cans so that the metal could be recycled. By using the metal again to make other cans, some of the resources have been saved.



**Read the Bible.**

3.17 Read Genesis 1:28. Write the verse in your own words.

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**Read and write.**

Look up National Parks in your encyclopedia. Find the special treasure in each of the following places. Write the treasure on the lines.

3.18 Carlsbad Caverns, New Mexico \_\_\_\_\_

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3.19 Everglades National Park, Florida \_\_\_\_\_

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3.20 Grand Canyon National Park, Arizona \_\_\_\_\_

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3.21 Haleakala National Park, Hawaii \_\_\_\_\_

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3.22 Mesa Verde National Park, Colorado \_\_\_\_\_

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3.23 Denali National Park, Alaska \_\_\_\_\_

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3.24 Petrified Forest National Park, Arizona \_\_\_\_\_

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3.25 Sequoia National Park, California \_\_\_\_\_

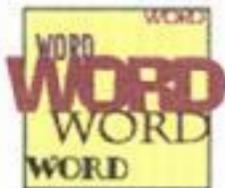
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3.26 Yellowstone National Park, Wyoming \_\_\_\_\_

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3.27 Zion National Park, Utah \_\_\_\_\_

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### Write the answers.

- 3.28 What is erosion? \_\_\_\_\_
- 3.29 How could erosion be stopped? \_\_\_\_\_  
\_\_\_\_\_
- 3.30 What is *pollution*? \_\_\_\_\_
- 3.31 How can air pollution be stopped? \_\_\_\_\_  
\_\_\_\_\_
- 3.32 How can water pollution be stopped? \_\_\_\_\_  
\_\_\_\_\_
- 3.33 What are some new ways to get energy? \_\_\_\_\_  
\_\_\_\_\_
- 3.34 What would you do if you *conserved* something? \_\_\_\_\_  
\_\_\_\_\_
- 3.35 What would you do if you *preserved* something? \_\_\_\_\_  
\_\_\_\_\_
- 



Before you take this last Self Test, you may want to do one or more of these self checks.

1. \_\_\_\_ Read the objectives. See if you can do them.
2. \_\_\_\_ Restudy the material related to any objectives that you cannot do.
3. \_\_\_\_ Use the SQ3R study procedure to review the material:
  - a. **S**can the sections,
  - b. **Q**uestion yourself,
  - c. **R**ead to answer your questions,
  - d. **R**ecite the answers to yourself, and
  - e. **R**evise areas you did not understand.
4. \_\_\_\_ Review all vocabulary, activities, and Self Tests, writing a correct answer for every wrong answer.

## SELF TEST 3

**Match these items** (each answer, 2 points).

- |       |       |           |    |   |
|-------|-------|-----------|----|---|
| 3.01  | _____ | erosion   | a. | to use wisely                           |
| 3.02  | _____ | ecology   | b. | air pollution                           |
| 3.03  | _____ | pollution | c. | plowing in curves                       |
| 3.04  | _____ | smog      | d. | to save for the future                  |
| 3.05  | _____ | extinct   | e. | staying in balance with our environment |
| 3.06  | _____ | contour   | f. | waste, dirt, impurities                 |
| 3.07  | _____ | plankton  | g. | sun energy                              |
| 3.08  | _____ | solar     | h. | killed off                              |
| 3.09  | _____ | conserve  | i. | top soil washed away                    |
| 3.010 | _____ | preserve  | j. | small water animals and plants          |

**Answer these questions** (each answer, 3 points).

3.011 What are two ways that soil is often wasted?

- a. \_\_\_\_\_  
b. \_\_\_\_\_  
\_\_\_\_\_

3.012 What are two ways that water is being polluted or wasted?

- a. \_\_\_\_\_  
b. \_\_\_\_\_

3.013 What are two ways that air is being polluted?

- a. \_\_\_\_\_  
b. \_\_\_\_\_

3.014 What are two animals that you would find in a river community?

- a. \_\_\_\_\_  
b. \_\_\_\_\_

**Choose the best answer.** (Write the letter of the answer on the line (each answer, 2 points).

3.015 By leaving thickets and weedpatches, farmers \_\_\_\_\_.

- a. show poor use of land                      b. attract wildlife

3.016 Cabbage grows in the soil. It is a \_\_\_\_\_.

- a. producer                      b. consumer                      c. decomposer

- 3.017 Replanting forests \_\_\_\_\_ .  
 a. has no effect on the water supply  
 b. helps put water into underground reservoirs
- 3.018 A clean countryside \_\_\_\_\_ .  
 a. attracts animals      b. discourages pests      c. does both
- 3.019 Two animals from a desert community are \_\_\_\_\_ .  
 a. plankton and squid      c. otter and beaver  
 b. jack rabbits and elf owls
- 3.020 Plants and animals live together and depend on each other in \_\_\_\_\_ .  
 a. pollution      b. photosynthesis      c. communities
- 3.021 The three levels of a forest community are \_\_\_\_\_ .  
 a. top, bottom, underground  
 b. sky, trees, bushes      c. top, middle, lower levels
- 3.022 The largest supply of energy today comes from \_\_\_\_\_ .  
 a. coal      b. the sun      c. oil

**Answer these questions** (each answer, 5 points).

- 3.023 What would you do if you *preserved* something? \_\_\_\_\_  
 \_\_\_\_\_
- 3.024 What would you do if you *conserved* something? \_\_\_\_\_  
 \_\_\_\_\_

**Complete these activities** (each answer, 3 points).

- 3.025 Name four resources that God has given to all life on earth.  
 a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_  
 d. \_\_\_\_\_
- 3.026 Name three kinds of life in all communities.  
 a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_

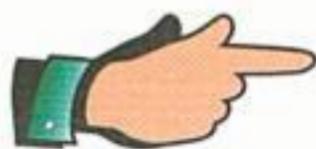
3.027 Make a food chain of one community you have studied.

3.028 All energy comes from the \_\_\_\_\_.

3.029 The name given to the idea that all life is connected is the

“\_\_\_\_\_.”

	Possible Score 100	My Score _____
	Teacher check _____	Initial _____ Date _____



Before taking the LIFEPAC Test, you may want to do one or more of these self checks.

1. \_\_\_\_\_ Read the objectives. See if you can do them.
2. \_\_\_\_\_ Restudy the material related to any objectives that you cannot do.
3. \_\_\_\_\_ Use SQ3R study procedure to review the material.
4. \_\_\_\_\_ Review activities, Self Tests, and LIFEPAC vocabulary words.
5. \_\_\_\_\_ Restudy areas of weakness indicated by the last Self Test.





# SCIENCE

4 0 3

## LIFEPAC TEST

Name \_\_\_\_\_

Date \_\_\_\_\_

Score \_\_\_\_\_

Possible Score \_\_\_\_\_ 100

## SCIENCE 403: LIFE PAC TEST

**Match these items** (each answer, 2 points).

- |           |                        |                                   |
|-----------|------------------------|-----------------------------------|
| 1. _____  | producers              | a. feed on other animals          |
| 2. _____  | web of life            | b. study of homes                 |
| 3. _____  | predators              | c. nature's clean-up crew         |
| 4. _____  | plant-eating consumers | d. natural home of a living thing |
| 5. _____  | decomposers            | e. make food                      |
| 6. _____  | environment            | f. where you live                 |
| 7. _____  | ecology                | g. none left alive                |
| 8. _____  | habitat                | h. eat plants                     |
| 9. _____  | extinct                | i. to use wisely                  |
| 10. _____ | conserve               | j. all life is connected          |

**Write the letter of the best answer on the line** (each answer, 2 points).

11. Left alone, every natural community \_\_\_\_\_ .  
a. will get bigger                      b. is balanced                      c. will get smaller
12. Small decomposers seen only under a microscope are \_\_\_\_\_ .  
a. fish                                      b. fungi                                      c. bacteria
13. A clean countryside \_\_\_\_\_ .  
a. attracts animals                      b. looks bad                              c. smells bad
14. To increase your water supply you can \_\_\_\_\_ .  
a. replant forests  
b. stop drinking water  
c. drain your swamps
15. The scientist who studies ecology is \_\_\_\_\_ .  
a. an ecologist                              b. a water expert                              c. a government worker
16. National Parks \_\_\_\_\_ .  
a. are only for rocks                      b. preserve some natural treasures                      c. are private



25. Make a food chain of something you eat.

**Write true or false** (each answer, 2 points).

26. \_\_\_\_\_ Pollution is good for you.  
27. \_\_\_\_\_ Smog helps everything to live better.  
28. \_\_\_\_\_ To conserve things means to use them wisely.  
29. \_\_\_\_\_ A fish depends on plankton for energy from the sun.  
30. \_\_\_\_\_ A rabbit is a producer.  
31. \_\_\_\_\_ An elf owl needs the saguaro cactus for a home.  
32. \_\_\_\_\_ Living things can get along without water.  
33. \_\_\_\_\_ Predators are meat-eating consumers.

**Complete this activity** (this answer, 5 points).

34. Tell how the balance of nature works. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

